RUNCO
THE WORLD'S FINEST HOME THEATER PRODUCTS™

3Dimension Series
Model D-73d and D-73d Ultra
LED Home Theater Projection System
Quick Setup Guide

WARNING

IMPORTANT HEALTH AND SAFETY INFORMATION FOR 3D VIEWING: Please read and make sure you understand the following safety information before using the product for viewing 3D content. Provide this information to the end users of this product and ensure that they understand it.

It is widely recognized that stereographic display devices can cause discomfort, including, without limitation, dizziness, nausea, headaches, eye fatigue and eye-strain, in some individuals. The 3D effect and experience will vary by individual, depending on a variety of factors, including his or her health and vision. Runco recommends that users take regular breaks when watching 3D video or playing games using stereoscopic displays. Discontinue use if any discomfort occurs. Parents of young children should ensure their children avoid extensive exposure to electronic stereographic entertainment.

The quality and appropriateness of the 3D screen materials onto which the image is projected and the quality of the 3D content being displayed both have a significant and noticeable impact on the overall 3D experience. A properly-calibrated projection system, including glasses and an optimized third-party screen, displaying high-quality 3D content is the best formula for immersive and comfortable 3D experiences in the home. Please refer to the ***D-73d Series Installation/Operation Manual*** *for proper projector installation and usage instructions.*

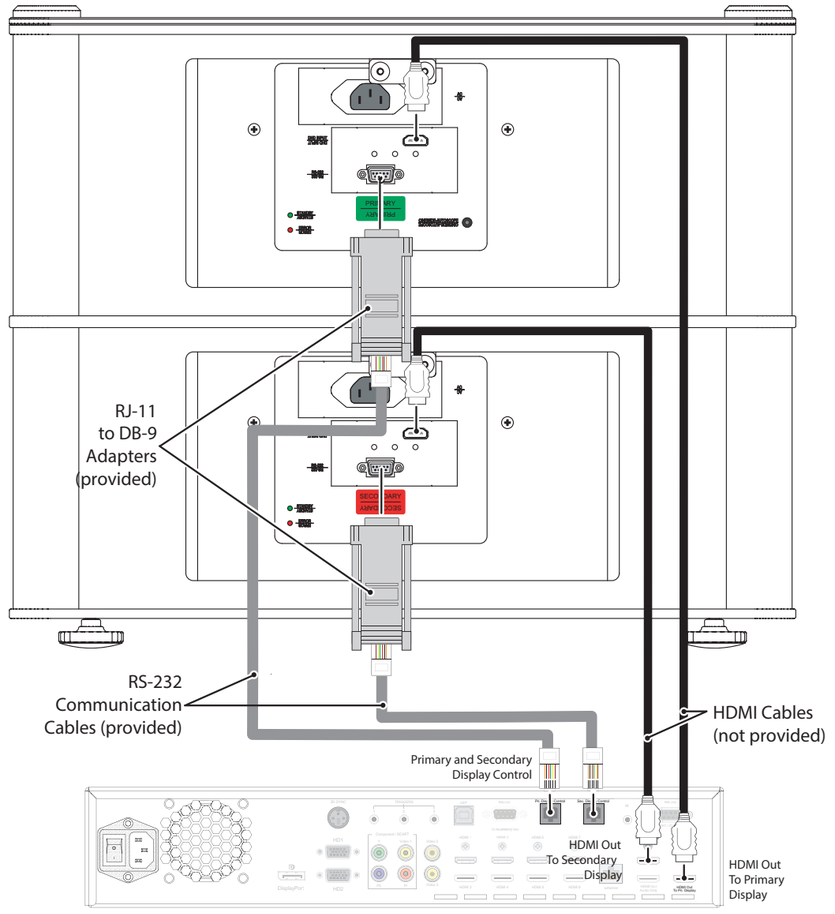
The glasses that accompany this product are not safe to use as sunglasses, protective eyewear or any use outdoors or other than only in conjunction with the proper operation of the Runco product with which they are sold. It is common to dim the lights in a home theater. Using 3D glasses and the immersive imagery of stereoscopic imagery can increase the risk of tripping or falling the dark. Special care should be taken.

Do not tilt your head while using the 3D glasses.

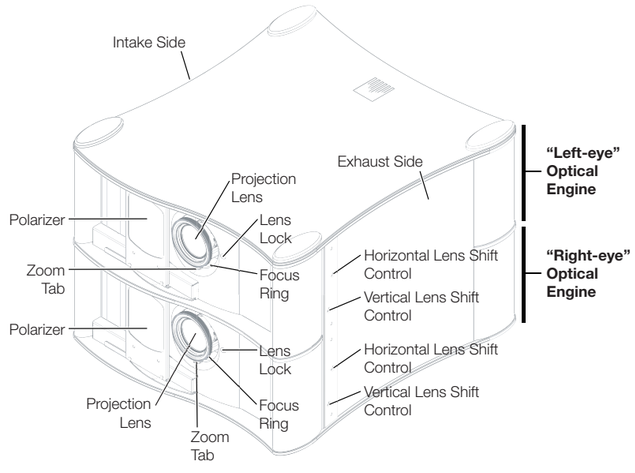
Table 1. Installation Overview

Step	Procedure	For Details, Refer to this page in the *D-73d Series Installation/Operation Manual*
1	Choose a location for the projector	23
2	Choose and install a 3D-compatible screen	24
3	Install CineWide lens mounting assembly (stationary base plate or AutoScope lens motor – optional)	31
4	Mount the projector	36
5	Mount the Dimension Digital Controller	37
6	Connect the Dimension Digital Controller to the projector	38
7	Connect other external equipment to the Dimension Digital Controller (optional): • Audio processor or secondary display device • Control system interface (RS-232) • 12-volt trigger-activated equipment (retractable screens or screen masking) • External IR repeater • Network hub, router or gateway (Ethernet)	40
8	Connect signal sources to the Dimension Digital Controller	45
9	Connect system components to AC power	50
10	Power up the system and perform optical alignment procedures (refer to Table 2)	51
11	**Display calibration —Dimension Digital Controller:** adjust the following for each input and display mode (resolution and frame rate); save settings when finished: • Aspect ratio • Contrast • Tint • White Balance • Brightness • Color level • Sharpness	68

Connecting the Dimension Digital Controller to the Projector



Projector Lens Adjustments



- **PROJECTION LENS**
  Available in three versions: standard throw range (1.94:1 to 2.40:1), short throw range (1.64:1 to 1.86:1) and long throw range (D-73d Ultra only; 2.52:1 to 4.00:1).
- **LENS LOCK**
  Freezes the zoom and lens shift settings to keep the projector images aligned over time. Use the supplied, 5.0-mm Hex wrench to lock the lens position. (Turn clockwise two or three turns.)

WARNING ***Do not attempt any primary lens adjustments when the lenses are locked.*** *Doing so may cause damage to the zoom or lens shift mechanisms.*

- **HORIZONTAL AND VERTICAL LENS SHIFT CONTROLS**
  Insert the supplied, 5.0-mm Hex wrench into the opening and turn it as needed to shift the lens in the desired direction.
- **FOCUS RING**
  Rotate this to focus the projected image.
- **ZOOM TAB**
  Rotate this to change the projected image size.

Table 2. D-73d Optical Alignment Procedure (with Anamorphic Lenses)

START

Dimension Digital Controller 1. Leave system off for now. 2. Connect an active 1080p source to the **HDMI 1** connector.	**Projector** 1. Mount the projector (refer to ***Mounting the D-73d*** on page 36). 2. Mount the Dimension Digital Controller (refer to ***Mounting the Dimension Digital Controller*** on page 37). 3. Connect system components to each other and to external equipment (refer to ***System Interconnections*** on page 38). 4. **D-73d/CineWide with AutoScope only: Install anamorphic lenses** in retracted position (out of the light path) and ensure that the AutoScope transport motor AC switch is in the "off" position. 5. Loosen the lock screw for both primary lenses.

Note: All page references given here are to the *D-73d Series Installation/Operation Manual*.

Note: At this point the anamorphic lenses are simply used as weight to maintain the correct center of gravity while you adjust the primary lens, so that the projector won't shift when you add the anamorphic lenses later.

Dimension Digital Controller 1. Turn on system and select the **HDMI 1** input. 2. Select **Calibration -> Adjustment Mode** and set it to **Primary**. 3. Select **Service -> Test Video** and choose **Primary Alignment**.	**Projector (Align Primary/Left Image with Screen)** 1. Adjust the ceiling mount to correct for image keystone and clocking. 2. Align the image to the screen by adjusting the Left (top) primary lens zoom, focus and H/V offset. 3. Tighten the Left primary lens lock screw.

Notes:
1. You must enter a passcode to access the Calibration or Service menu.
2. The lock screw locks all lens adjustments except for focus.

Dimension Digital Controller 1. Select **Calibration -> Adjustment Mode** and set it to **Secondary**. 2. Select **Service -> Test Video** and choose **Secondary Alignment**.	**Projector (Align Secondary/Right Image with Screen)** 1. Align the image to the screen by adjusting the Right (bottom) primary lens zoom, focus and H/V offset. 2. Tighten the Right primary lens lock screw. 3. **D-73d/CineWide with AutoScope only: Remove anamorphic lenses.** Set the AutoScope transport motor AC switch to the "on" position.

Note: The default warp is 46 pixels on the left and right sides (x) and 26 pixels at the top and bottom (y). If more is needed, use the "Image Alignment" controls to increase it.

Dimension Digital Controller 1. For a ceiling-mounted (inverted) and/or rear-projection installation, select **Service -> Display Device -> Configure -> Installation -> Picture Orientation** and set it as needed. 2. Select **Aspect Ratio** and set it to **Cinema**. On a D-73d/CineWide with AutoScope, this should position the anamorphic lens transport in front of the primary lenses. 3. Select **Calibration -> Adjustment Mode** and set it to **Primary**. 4. Select **Service -> Test Video** and choose **Primary Alignment**.	**Projector** 1. **(Re-)install anamorphic lenses.** 2. Align the primary (left-eye) image with the screen by adjusting the Left (top) anamorphic lens to produce the least amount of distortion.

Table 2. D-73d Optical Alignment Procedure (with Anamorphic Lenses) (Continued)

Dimension Digital Controller 1. Select **Calibration -> Adjustment Mode** and set it to **Secondary**. 2. Select **Service -> Test Video** and choose **Secondary Alignment**.	**Projector** 1. Align the secondary (right-eye) image to the screen by adjusting the Right (bottom) anamorphic lens to produce the least amount of distortion.

Dimension Digital Controller (Align Secondary Image with Primary Image) 1. Select **Aspect Ratio** and set it to **16:9**. 2. Select **Calibration -> Adjustment Mode** and set it to **Secondary**. 3. Select **Calibration -> Image Alignment -> Corner Alignment**, check the **Primary Test Pattern** and **Secondary Test Pattern** boxes and adjust corners. 4. Select **Calibration -> Image Alignment -> Midpoint Alignment**, check the **Primary Test Pattern** and **Secondary Test Pattern** boxes and adjust midpoints.	**Projector** No adjustment needed.

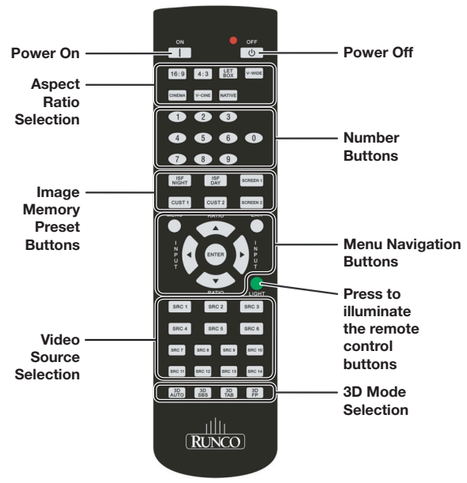
Note: The Primary lens image is usually left un-warped. This provides the best image quality and will be un-scaled for 1080p sources. You can adjust the Primary image if needed, however, by setting the **Adjustment Mode** to **Primary**, checking the **Primary Test Pattern** and **Secondary Test Pattern** boxes and adjusting the corners and/or mid-points prior to this step.

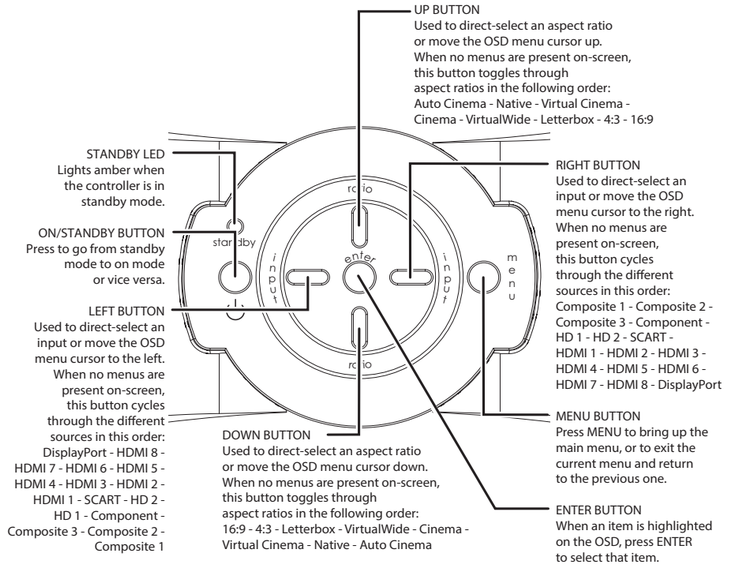
Dimension Digital Controller 1. Select **Aspect Ratio** and set it to **Cinema**. 2. Select **Calibration -> Image Alignment -> Corner Alignment** and adjust corners. 3. Select **Calibration -> Image Alignment -> Midpoint Alignment** and adjust midpoints.	**Projector** No adjustment needed.

Note: The Dimension Digital Controller saves the Image Alignment (warp) settings for each aspect ratio. To program additional aspect ratios, select each one and use the controls in the **Corner Alignment** and **Midpoint Alignment** menus. Or, select **Calibration -> Copy/Paste -> Aspect Ratio -> Copy Settings**, select a different aspect ratio and choose **Paste Settings.**

END

Dimension Digital Controller Remote Control and Front-Panel Keypad




UP BUTTON
Used to direct-select an aspect ratio or move the OSD menu cursor up. When no menus are present on-screen, this button toggles through aspect ratios in the following order: Auto Cinema - Native - Virtual Cinema - Cinema - VirtualWide - Letterbox - 4:3 - 16:9
STANDBY LED
Lights amber when the controller is in standby mode.
ON/STANDBY BUTTON
Press to go from standby mode to on mode or vice versa.
LEFT BUTTON
Used to direct-select an input or move the OSD menu cursor to the left. When no menus are present on-screen, this button cycles through the different sources in this order: DisplayPort - HDMI 8 - HDMI 7 - HDMI 6 - HDMI 5 - HDMI 4 - HDMI 3 - HDMI 2 - HDMI 1 - SCART - HD 2 - HD 1 - Component - Composite 3 - Composite 2 - Composite 1
RIGHT BUTTON
Used to direct-select an input or move the OSD menu cursor to the right. When no menus are present on-screen, this button cycles through the different sources in this order: Composite 1 - Composite 2 - Composite 3 - Component - HD 1 - HD 2 - SCART - HDMI 1 - HDMI 2 - HDMI 3 - HDMI 4 - HDMI 5 - HDMI 6 - HDMI 7 - HDMI 8 - DisplayPort
DOWN BUTTON
Used to direct-select an aspect ratio or move the OSD menu cursor down. When no menus are present on-screen, this button toggles through aspect ratios in the following order: 16:9 - 4:3 - Letterbox - VirtualWide - Cinema - Virtual Cinema - Native - Auto Cinema
MENU BUTTON
Press MENU to bring up the main menu, or to exit the current menu and return to the previous one.
ENTER BUTTON
When an item is highlighted on the OSD, press ENTER to select that item.
standby
input
enter
menu

OSD Menu Tree

Note: Default settings appear in **bold type**.

Input Source	Composite 1	HDMI 1
	Composite 2	HDMI 2
	Composite 3	HDMI 3
	Component	HDMI 4
	HD 1	HDMI 5
	HD 2	HDMI 6
	SCART	HDMI 7
	DisplayPort	HDMI 8
Aspect Ratio	16:9	
	4:3	
	Letterbox	
	VirtualWide	
	Cinema	
	Virtual Cinema	
	Native	
	Auto Cinema	
Screen	**Screen 1** / Screen 2	
Picture	Brightness	
	Contrast	
	Color	
	Tint	
	Sharpness	
	Noise Filter	
Input Position	Left/Right	
	Up/Down	
	Width	
	Height	
	Overscan	
	Overscan Mode (Zoom/Crop)	
	Phase (RGB/Component/SCART signals only)	
	Tracking (RGB/Component/SCART signals only)	
Memory Presets	Recall ISF Night or ISF Day	
	Recall/Save Custom 1 or Custom 2	
	Reset Custom 1 and Custom 2 to Factory Default	
3D Processing	3D Mode (**Auto**, Off, Side-by-Side, Top-and-Bottom or Frame Packing)	
	Reverse Eyes (On/**Off**)	
Sleep Timer	**Off**, 30 Minutes, 60 Minutes, 90 Minutes, 2 Hours or 4 Hours	
Information	Signal	(read-only)
	System	
	Network	
	Field Service	
	Manufacturing	

Calibration	Display Color - Common Settings	Gain	-100, -99... **0** ... 99, 100 (Red, Green, Blue)
		Offset	
		Gamma	Mode (**Simple** / Advanced)
			Simple (1.8, 2.0, **2.2**, 2.35 or 2.5)
			Advanced (**0** (2.2 gamma curve), 1, 2, 3 ... 20 (custom gamma tables))
		Color Temp	Simple (5500K, **6500K**, 7500K or 9300K)
		Color Gamut	Auto, REC709, SMPTE-C, EBU, **Native** or PCE
		PCE	Hue (Red / Yellow / Green / Cyan / Blue / Magenta)
			Saturation (Red / Yellow / Green / Cyan / Blue / Magenta)
			Level (Red / Yellow / Green / Cyan / Blue / Magenta)
			Runco Smart Color (RSC) (On or Off)
			White Balance (Red / Green / Blue Gain)
	Display Color - Projector Settings	SatCo	On or **Off**
		ConstantContrast	**Low**, Medium, High or Off
		Engine Configuration	**Dual** / Single
	Input Image	Brightness	-50, -49 ... **0** ... 49, 50
		Contrast	
		Color	
		Tint	
		Sharpness	
	Input Color	Gain	-32, -31... **0** ... 31, 32 (HD 1, HD 2 and Component inputs only)
		Offset	
		Chroma Delay	**0**, 1, 2 ... 7 (Composite inputs only)
		Noise Filter	**0**, 1, 2 ... 63
	Save ISF Night	Back / Confirm	
	Save ISF Day		
	Copy/Paste	Memory Preset	Copy Settings
			Paste Settings
		Aspect Ratio	Copy Settings
			Paste Settings
	Output Shift	Left/Right	-50, -49 ... **0** ... 49, 50
		Up/Down	
		Width	-50, -49, 48 ... **0**
		Height	
		Screen Masking	**0**, 1, 2 ... 100 (Top/Bottom/Left/Right/Test Pattern Enable)
	Image Alignment	Corner Alignment	Top Left / Top Right / Bottom Left / Bottom Right / Test Pattern Enable
		Midpoint Alignment	Center / Top Middle / Left Middle / Right Middle / Bottom Middle / Test Pattern Enable
	Adjustment Mode	**Both**, Primary or Secondary	
	Splash Configure	Owner Name	
		ISF Calibrated	
		ISF Other	
		Splash Timer	5, 6, 7 ... **15** ... 59, 60
		Splash Enable	On/Off
	OSD Position	Hor. / Ver.	**0**, 1, 2 ... 100

Service	Test Video	Color Bars 1	
		Color Bars 2	
		Focus	
		Grey Bars	
		Full White	
		Primary / Secondary / Dual Alignment	
		3D	
	Input Names	Rename/Restore	
	Remote Control	Remote Code	00000 ... **08209** ... 65535 or 88999 (extended mode)
		SRC 1-7 Keys	(select a key, then choose a source to assign to it)
		SRC 8-14 Keys	
	Display Device - Configure	Picture Orientation	Auto, **Floor Front**, Ceiling Front, Floor Rear or Ceiling Rear
		Display Info. (read-only)	(Projector Serial Number)
		Diagnostics	White, Red, Green, Blue, Yellow, Cyan, Magenta
		Altitude	**Auto** / High
	Network	IP Configuration	DHCP (**On** / Off), IP Address, Subnet Mask, Default Gateway, Communication Test
	Color Space	**Auto**, REC601, REC709, RGB-PC or RGB-Video	(Not available on Composite 1, Composite 2 or Composite 3 inputs)
	Triggers	1 / 2 / 3	
	Miscellaneous	Language	**English**, Français, Deutsch, Italiano, Español, Svenska, 简体中文 (Simplified Chinese), 繁體中文 (Traditional Chinese), Português, Русский (Russian), 日本語 (Japanese) or 한국어 (Korean)
		OSD Timer	0 (no timeout) or 5, 6, 7 ... **30** ... 60 sec.
		OSD Messages	On / Off
		Blank Screen Color	Red/Green/Blue = **0**, 1, 2, 3 ... 255
		Sidebar Color	
		Film Mode (SD sources only)	On / Off
		CUE (Chroma Upsampling Error)	On / Off
		Sync Threshold	0, 1, 2 ... 15 (HD 1, HD 2 and Component inputs only)
	HDMI	HDMI EDID Extension	**On** / Off (per HDMI input)
		Audio Format	Combined / HDMI Out (Pri. Display) / HDMI Out (Sec. Display) / **HDMI Out (Audio Only)**
		CEC	**On** / Off
		HPD Toggle Rejection	**Auto** / On / Off
	Front Panel Brightness	Logo LED	0 (off), 1, 2 ... **31**
		Standby LED	**On** / Off
		LCD	0 (off), 1, 2, 3 or **4**
	Auto Power Off	Enable	On / Off / **No Signal**
		Hours	**1**, 2, 3, 4, ... 23, 24
	Standby Mode	**Low Power** / Fast Startup	
	System Reset		

Serial Communications

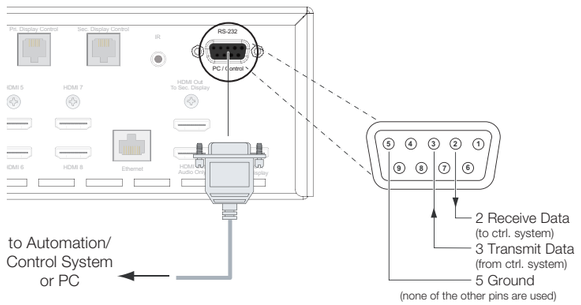
Note

Connect your control system or PC to the RS-232 input of the Dimension Digital Controller as shown in the diagram at right.

Configure the RS-232 controller or PC serial port as follows: no parity, 8 data bits, 1 stop bit and no flow control. Set the baud rate to 19200.

The following is a partial list of supported serial commands. For a complete list, refer to the ***D-73d Series Installation/Operation Manual****.*

All commands must be followed by a carriage return character.



Command	Description
Power On/Off Commands	
(PWR=0) or (KEY=2)	Turns projector off
(PWR=1) or (KEY=1)	Turns projector on
Input Selection Commands	
(INS=3) or (KEY=14)	Selects the Component input
(INS=0) or (KEY=13)	Selects the Composite 1 video input
(INS=1) or (KEY=24)	Selects the Composite 2 video input
(INS=2) or (KEY=25)	Selects the Composite 3 video input
(INS=7) or (KEY=19)	Selects the HDMI 1 input
(INS=8) or (KEY=20)	Selects the HDMI 2 input
(INS=9) or (KEY=21)	Selects the HDMI 3 input
(INS=10) or (KEY=22)	Selects the HDMI 4 input
(INS=11) or (KEY=81)	Selects the HDMI 5 input
(INS=12) or (KEY=82)	Selects the HDMI 6 input
(INS=13) or (KEY=83)	Selects the HDMI 7 input
(INS=14) or (KEY=84)	Selects the HDMI 8 input
(INS=15) or (KEY=85)	Selects the DisplayPort input
(INS=4) or (KEY=17)	Selects the RGB HD 1 input
(INS=5) or (KEY=18)	Selects the RGB HD 2 input
(INS=6) or (KEY=23)	Selects the SCART input
Aspect Ratio Commands	
(ASP=1) or (KEY=9)	Selects the 16:9 aspect ratio
(ASP=0) or (KEY=10)	Selects the 4:3 aspect ratio
(ASP=4) or (KEY=44)	Selects the Cinema aspect ratio
(ASP=2) or (KEY=11)	Selects the Letterbox aspect ratio
(ASP=6) or (KEY=46)	Selects the Native aspect ratio
(ASP=3) or (KEY=12)	Selects the VirtualWide aspect ratio
(ASP=5) or (KEY=45)	Selects the Virtual Cinema aspect ratio
(ASP=7) or (KEY=86)	Selects the Auto Cinema aspect ratio
Picture Adjust Commands (Calibration -> Input Image menu)	
(BRT=[-50...+50])	Sets a value for brightness
(CLR=[-50...+50])	Sets a value for color
(CON=[-50...+50])	Sets a value for contrast
(SHP=[-50...+50])	Sets a value for sharpness
(TNT=[-50...+50])	Sets a value for tint
Image Preset Commands	
(MMP=2) or (KEY=50)	Loads “Custom 1” image preset
(MMP=3) or (KEY=51)	Loads “Custom 2” image preset
(MMP=1) or (KEY=49)	Loads “ISF Day” image preset
(MMP=0) or (KEY=48)	Loads “ISF Night” image preset
3D Mode Commands	
(DTD?)	Returns the 3D mode setting
(TDM=[0...4])	Sets the 3D mode setting (0 = Auto, 1 = Off (2D), 2 = Side-by-Side, 3 = Top-and-Bottom, 4 = Frame Packing)
Screen Commands	
(SCN?)	Returns the screen setting
(SCN=0) or (KEY=38)	Sets the screen to Screen 1
(SCN=1) or (KEY=39)	Sets the screen to Screen 2
Miscellaneous Commands	
(IDN?)	Returns display device numeric identifier (1 = Auto; 51 = D-73d)
(IIR?)	Returns input resolution
(MDL?)	Returns product model name
(IOR?)	Returns output resolution
(RMN=[0...65535])	Sets the remote code
(RMN?)	Returns the remote code
(ISN?)	Returns Dimension Digital Controller serial number
(IFV?)	Returns firmware version number
(T[1...3][1...7]=[0...1])	12-volt trigger configuration: [1...3] = Trigger number [1...7] = Aspect ratio (1 = 16:9, 2 = 4:3, 3 = Letterbox, 4 = VirtualWide, 5 = Cinema, 6 = Virtual Cinema, 7 = Native) [0...1] = On/off (0 = Cancel previous assignment, 1 = assign) **Example:** (T15=1)[CR] assigns Trigger 1 to Cinema aspect ratio.
The following serial commands are used to emulate buttons on the remote control or Dimension Digital Controller front panel. Each button has its own serial command, so effectively it is as if you were using the IR remote. These commands provide active OSD responses just like IR remote commands.	
(KEY=6)	Down-Arrow (▼) key
(KEY=4)	**ENTER** key
(KEY=52)	**EXIT** key
(KEY=7)	Left-Arrow (◀) key
(KEY=3)	**MENU**
(KEY=8)	Right-Arrow (▶) key
(KEY=5)	Up-Arrow (▲) key

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